CURRICULUM VITAE

HONGTAO ZHANG

https://vison-eden.github.io/Hongtao-eden/

edenzht@gmail.com

PERSONAL PROFILE

Ph.D. with a passion for exploring innovative research. Adept at discussing and implementing research ideas, demonstrating focus and collaborative problem-solving within lab teams. Aspires to contribute to and advance the understanding of the brain's visual cognition and neural network's biological explainability. Also, interested in AI applications especially in the medical field and biological vision.

EDUCATION

Oct. 2021 – Sep. 2024	**Ph.D.** in Intelligent Informatics	Kochi University of Technology, Japan Advisor: Prof. Shinichi Yoshida
Oct. 2019 – Sep. 2021	**M.E.** in Intelligent Informatics	Kochi University of Technology, Japan Advisor: Prof. Shinichi Yoshida
Sep. 2015 – Jul. 2019	**B.E.** in Network Engineering	Jilin University of Zhuhai College, China Advisor: Prof. Yanchun Liang

RESEARCH

Research field	Deep Learning / Computer Vision / Cognitive Psychology
Research topic	Fundamental Theory of Brain Decoding and its Applications to Nonverbal Information Retrieval

RESEARCH GRANTS OF PROJECTS

2022 – 2026	Diagnostic support using explainable 3D-MRI image identification model using generative adversarial network, **JSPS KAKENHI (C)**
2022 – 2024	Automated diagnostic algorithm for chest CT of occupational lung disease, **JSPS KAKENHI (Exploratory)**
2022 – 2025	Development of a system to support implicit mutual aid by self-help for the elderly at home through lifelong learning, **JSPS KAKENHI (B)**
2021 – 2025	Deepening of Recommender Systems with Explanations and their Quality Evaluation, **JSPS KAKENHI (B)**
2020 – 2025	The Proposal of Neuro-Medical Scientific Evidence Regarding the Continuation or Surrender of Driver's Licenses for the Elderly, **JSPS KAKENHI (A)**
2017 – 2022	Brain Decoding for Super-resolution fMRI with unsupervised learning, **JSPS KAKENHI (C)**

PUBLICATIONS

Journal

Zhang, H., Matsuzaki, K., & Yoshida, S. (2024). Assessing brain-like characteristics of DNNs with spatiotemporal features: A study based on the Müller-Lyer illusion. IEEE Access, 12, 147192-147208.

Zhang, H., Yoshida, S., & Li, Z. (2024). Brain-like illusion produced by Skye's oblique grating in deep neural networks. PLOS ONE, 19(2), e0299083.

Zhang, H., & Yoshida, S. (2024). Exploring deep neural networks in simulating human vision through five optical illusions. Applied Sciences, 14(8), 3429.

Zhang, H., Shinomiya, Y., & Yoshida, S. (2021). 3D MRI reconstruction based on 2D generative adversarial network super-resolution. Sensors, 21(9), 1-20.

Conference

Zhang, H., & Yoshida, S. (2024). Perceptual parallels and divergences: Analyzing slant illusion response in deep neural networks. In Proceedings of the 31st International Conference on Neural Information Processing (ICONIP 2024), Auckland, New Zealand, APNNS.

Zhang, H., Yoshida, S., & Li, Z. (2023). Decoding illusion perception: A comparative analysis of deep neural networks in the Müller-Lyer illusion. In Proceedings of the 2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 1898-1903). IEEE.

Zhang, H., Li, Z., & Yoshida, S. (2022). Müller-Lyer illusion is replicated by higher layer of pre-trained deep neural network for object recognition. In Proceedings of the 10th International Symposium on Computational Intelligence and Industrial Applications (ISCIIA2022), Beijing, China.

Zhang, H., Shinomiya, Y., & Yoshida, S. (2020). 3D brain MRI reconstruction based on 2D super-resolution technology. In Proceedings of the 2020 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 18-23). IEEE.

Workshop

Zhang, H., & Yoshida, S. (2024). Deep neural networks as a vision-study model through optical illusion. In Proceedings of the 8th International Symposium on Frontier Technology (ISFT 2024).

Zhang, H., Shinomiya, Y., Yoshida, S., & Liang, Y. (2020). Improved single-image super-resolution for brain MRI image based on FSRCNN. In Proceedings of the International Workshop on Human-Engaged Computing 2020.

EXTRA-CURRICULAR ACTIVITIES

2019 – 2023 President of the International Students' Association, Kochi University of Technology
2019 – 2021 Futsal Club, Kochi University of Technology

2015 – 2019	Class President, Jilin University of Zhuhai College
2015 – 2017	Youth Volunteer Association, Jilin University of Zhuhai College
2015 – 2016	College Students' Innovation and Entrepreneurship Competition, China

TECHNICAL SKILLS

Computer Programs	C++, Java, Python
Deep learning frameworks	Tensorflow, PyTorch, Keras
Cognitive Psychology tool	PsychoPy, Matlab, FreeSurfer, fMRIPrep

AWARDS

Sep. 2024	The Sukuma Award (Best Graduate), Kochi University of Technology, Kochi, Japan
Oct. 2022	The Best Paper Award, the 10th International Symposium on Computational Intelligence and Industrial Applications, Beijing, China
Oct. 2021	The Special Student Scholarship Kochi University of Technology, Kochi, Japan
Jul. 2019	The Best Graduate, Jilin University of Zhuhai College, Zhuhai, China